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area of the base or lower end being double that of the top of the chimney-pot, and the upper end is constructed by a shoulder, leaving the aperture something longer than the top. A lid, or cover, whose upper surface is convex, is fixed by brackets to the inside of the cap, about three inches below the opening, and from three to four inches, (as the case may require,) above the top of the pot, and projects about one-eighth of an inch over the rim, to prevent the rain, &c. from dropping down the chimney. The cap is made to descend from three to six inches below the top of the pot, and in some instances the sides are carried up straight, without the shoulder; in which cases, the lid should not be distant more than two and a half or three inches from the top of the pot. The cap is fastened to the pot by four brackets, and may be made of iron, or any other proper material.

*Observations by the Patentee.*

This chimney-cap is principally intended to remedy those chimneys that smoke when the wind is in a particular quarter, and for such only it is professed to be a perfect cure, since it is impossible for the wind, in whatever direction it may come, to blow down the chimney. It will also prevent rain, snow, &c. from falling down the chimney, the unpleasant consequences of which are well known. By the cap being stationary, and admitting a free passage for the smoke on all sides, it is not liable to the inconveniences of most of the moveable tops, by becoming soon clogged up, and out of order.

It is particularly adapted to ships, as it requires no shifting, and acts the same in all directions of the wind.

*Method of making Bricks, so as to form cheaper and firmer Buildings, and useful under-ground Drains;*  
by John Stephens, Esq.

(From the Transactions of the Society for the Encouragement of Arts, Manufactures, and Commerce.)

I have sent, for the inspection of the Society of Arts, &c., three closure bricks, which, on examination, you will find to have been cut three-fourths of the way through in the middle, by a wire, and the whole of the way through at each end, which leave the ends square, and handsome for work.

The bricklayer, to divide each brick in length, has only to take the brick in his left hand with the mark, or cut downwards longitudinally, and by one smart blow with the trowel, he will have two complete king-closures, with which he can easily make four common closures.

I have shown them to many workmen, who all approve of them. I had two-hundred and fifty of them made by a brickmaker for an experiment, and I have ordered two thousand more. The builders who do the principal part of my work, have had some on their own account, and have since increased their orders. I have no doubt, when they are better known, they will come into general use.

A considerable saving in labour and waste of bricks may be effected by their use, particularly in walls where piers are built, and where there are many openings, the work will also be rendered more substantial.

There will be a saving in room and materials where the back of a chimney is built against a straight wall, particularly in flues for low buildings.

They will be found useful in ci-

ties or large towns, by being placed in partition walls instead of lath and plaster, and be a check to the ravages of fire.

They will be useful in preventing the passage of rats and mice, and the disagreeable smell occasioned when they die betwixt lath and plaster or wainscot.

They will also answer for draining land, and will form cheaper small drains from houses than any other method.

They may be cut in other forms or directions for particular purposes, according to the uses for which they are intended.

The additional expense of dividing them by the wire, is about two shillings per thousand; it is generally done after they have been molded one or two days, according to the dryness of the season.

I flatter myself, that if this communication meets with the approbation of the Society, it will render a benefit to the public.

On inquiry from builders, I am informed, that the saving by the use of the bricks I have invented, will be from two-and-a-half to five per cent. in a five window house in brick work and labour, in a front of forty feet with or without piers.

In ornamental brick piers for gateways I think the saving of bricks by means of cutting may be very considerable, and in the labour still more, besides the work being done more sound and substantial.

I am using a few of them in an eleven-inch brick-wall, (a system hitherto entirely new,) in a westernly aspect, as a preventative or guard against the effects of weather, and it will, in point of dryness, be equal to a fourteen-inch wall. I have enclosed a letter from Benjamin Garroway, a brick-layer, who has requested me to let him have all

the bricks<sup>1</sup> nave of this kind, and to bespeak more for him. I have also sent a certificate from Mr. Robert Wright, who is extensively engaged in buildings.

The drains for agricultural purposes might be done by women or children, except the digging of the drains, especially two-inch drains. With respect to longer drains, if they are required of four inches, and to be covered with brick, I would recommend the bricks to be laid anglewise, in order to promote strength in covering.

Every brick intended for the operation I recommend, is taken off the stack two or three days after it is molded. It is then put on a stool or board, and a wire, about the size of No. 23, is pressed on the upper side of the brick, so as to pass through each end of it, it is then immediately placed on the stack again, and afterwards burned.

*Letter from Mr. Richard Billing, to Mr. Stephens.*

SIR,

Agreeably to your request I have taken into consideration the utility of your enclosure bricks, and beg leave to say that my opinion coincides with yours, as to their advantage in new chimnies which are intended to be built against old walls. In constructing a new chimney it is generally considered absolutely necessary, that the same should be worked up close to the old wall, but completely unconnected, in order that it might settle from the old; in this case it is very desirable to make the back of the chimney as thin as possible, that it may project as little as convenient, and in building piers, particularly small ones, either for gateways, or fronts of houses, where there are many bricks, and in the present mode which is so frequently adopted, of two-inch recesses at the

exterior of the windows, your closures would be much preferable, even in appearance, to a brick which has been cut with a trowel, with the surface, of course, defaced.

Closure bricks might be adopted as a cheap and useful drain by a common brick flat, with two closures laid on the same, two inches asunder, or four inches and reversed.

Your closures would be useful in all kind of ornamental brick work.

Two inches is a very desirable brick, but most times avoided, in consequence of the waste in cutting common bricks, and difficulty in producing a smooth face, which would be completely obviated by the introduction of closure bricks.

Yours, &c.

RICH. BILLING.

*Reading, Dec. 3d, 1810.*

*Mode of conveying Steam from Boilers; by Mr. George Webster. (From the Transactions of the Society for the Encouragement of Arts, Manufactures, and Commerce.)*

It is with pleasure that I communicate to you the contents of this paper, hoping that this invention will be beneficial to the public; the leading feature of the contrivance is simplicity, and that may possibly be a fair recommendation, at least such it seems to me.

I have just finished a new erection, for my better accommodation in the whitening and stoving of woollen cloths, and having been long annoyed in this business with the steam from the hot water in the pans, I determined, if possible, to get quit of it; besides I had ample proof in my old building, how injurious the steam was to the timbers of the floors, &c. Permit me to say, that I spent a decent sum of money to no purpose, and was giv-

BELFAST MAG. NO. XLVII.

ing up the idea, in despair of its accomplishment, when I hit upon this expedient, which answers my most sanguine desires.

I presume that this easy method of carrying away the steam has never yet been in practice, and if once known will be of very considerable utility. In the numerous instances in trades where steam is inconvenient, it offers a ready riddance; to the timber in buildings, and to the furniture in houses, private kitchens, &c. it affords a desired security; but in many trades, as glue-makers, tallow-chandlers, &c., where the effluvia, united with or without water, is offensive and obnoxious, it must be doubly and trebly valuable; and these cases are more numerous than I can recite or am acquainted with. The evaporating matter needs no longer to be the plague of the workmen, or the nuisance of the neighbourhood.

I hope that the plan, though simple, and that the object, though not of the first magnitude, will be deemed worthy of the approbation of the Society.

In the model I have sent to the Society, the steam chimney is carried up as high as the smoke chimney, which is the case at my works, being my first essay; but this is not immediately necessary, for in the bleach-house belonging to Messrs. Benyon, Benyon, and Baze, flax-spinners, of this place, I advised the steam to enter the smoke-flue, about six feet above the top of the pan, and with the same good effect.

Several of my friends here have adopted them in their kitchens, and wash and brew-houses. The steam-flues are variously curved, as the situations required them to reach the nearest or most convenient smoke chimney, and with the same uniformly good success. I would, however, recommend, that at the lower

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